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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,696	04/15/2004	Chiwoei Wayne Lo	6317P090D	9197
45401	7590	08/01/2006	EXAMINER	
APPLIED MATERIALS/BLAKELY PATENT COUNSEL, LEGAL AFFAIRS DEPARTMENT P. O. BOX 450A SANTA CLARA, CA 95054			NGUYEN, SANG H	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 08/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/825,696	Applicant(s) LO ET AL.	
	Examiner Sang Nguyen	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5 and 6 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>04/15/04</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This application is a Divisional application Serial No. 09/898,318 filed on 07/02/2002.

#### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 04/15/04 has been entered. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

#### ***Claim Objections***

Claims 1-6 are objected to because of the following informalities:

Applicant should change to the term "acts of:" to – steps of –, because the language "method comprising the steps of:" should be used in the method claim. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 101***

Claims 1 and 2 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a "determining a presence or absence of defects in the workpiece from the detected particles" in claim 1 and a phrase "each of the charged particle beams is directed onto a different region of the workpiece" in claim 2 asserted utility or a well established utility.

Part b. *Practical Application the Produces a Useful, Concrete, and Tangible Result* under Section IV *Determine Whether the Claimed Invention Complies with the Subject Matter Eligibility Requirement of 35 U.S.C. Sec. 101*, sentence 3, in the OG Notice from 22 November 2005 states 'In determining whether the claim is for a "practical application," the focus is not on whether the steps taken to achieve a particular result are useful, tangible, and concrete, but rather that the final result achieved by the claimed invention is "useful, tangible, and concrete."

Claims 1 and 2 are also rejected under 35 U.S.C. 112, first paragraph.

Specifically, since the claimed invention is not supported by either a “determining a presence or absence of defects in the workpiece from the detected particles” in claim 1 and a phrase “each of the charged particle beams is directed onto a different region of the workpiece” in claim 2 asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-3 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honjo et al (U.S. Patent No. 5,557,105) in view of Fernandez et al (U.S. Patent No. 6,376,984).**

**Regarding claim 1;** Honjo et al discloses a method of inspecting a workpiece, comprising the steps of:

projecting an array of charged particle beams (503a, 504a of figure 25) from electron emitters (503, 504 of figure 25) towards the workpiece considered to be a sample (513 of figure 25);

passing each of the beams (503a, 504a of figure 25) through one of a plurality of pole pieces (e.g. eight pole pieces [802 of figure 48a or 753 of figures 49-50]) , there being one pole piece (802 of figure 48a) associated with each beam (figure 50);

detecting resulting secondary or backscattered particles from the workpiece (513 of figure 24) by detectors (508, 509 of figure 25 and col.18 lines 16-40); and

determining a presence or absence of defects in the workpiece from the detected particles by detection signal processor (5 of figure 1 or 305 of figure 20 and col.8 lines 13-24). See figures 1-50.

U.S. Patent Sep. 17, 1996 Sheet 16 of 39 5,557,105

Fig.8

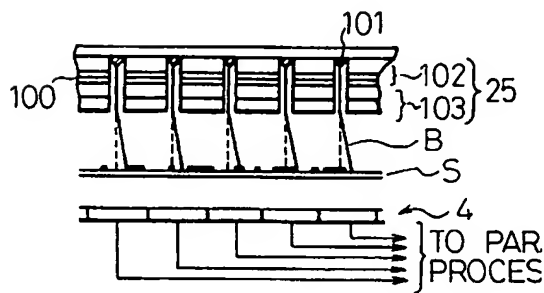
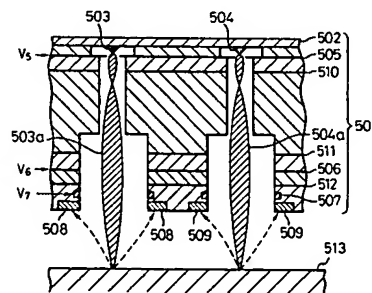


Fig. 25



Honjo et al discloses all of features of claimed invention except for each of beams passing through a single lens coil surrounding the plurality of pole pieces. However, Fernandez et al teaches that it is known in the art to providing a method the

steps comprising of each of beams (203 of figure 2) passing through a single lens coil surrounding the plurality of pole pieces (col.2 lines 47-57). See figures 1-6.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the method of Honjo et al with each of beams passing through a single lens coil surrounding the plurality of pole pieces as taught by Fernandez et al for the purpose of reducing aberrations.

**Regarding claim 2;** Honjo et al discloses each of the charged particle beams (503a, 504a of figure 25) is directed onto a different region (figures 10b, 12, and 25) of the workpiece (513 of figure 25).

**Regarding claim 3;** Honjo et al discloses translating the workpiece (513 of figure 25) relative to an axis of the array of charged particle beams (figures 8, 11-12, and 25).

**Regarding claim 5;** Honjo et al discloses focusing individually each of the charged particle beams (503a, 504a of figures 9a-9b and 25) onto the workpiece (513 of figure 25) ; and providing a plurality of additional focusing fields (figures 9a-9b), one associated with each of the beams (col.17 lines 43-65 and col.26 lines 60-67).

**Regarding claim 6;** Honjo et al discloses the additional focusing fields (figures 9a-9b) are located at a perimeter of the array of charged particle beams ( $B_1$ - $8_N$  of figures 9a-9b).

#### ***Allowable Subject Matter***

**Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.**

The prior art of record, taken alone or in combination, fails discloses or render obvious method of inspecting a workpiece and apparatus comprising all the specific elements with the specific combination including of the step of determining if one of the charged particle beams has failed; and translating the workpiece relative to the array of charged particle beams, thereby to direct one of the remaining beams onto that portion of the workpiece onto which the failed beam was intended to be incident in set forth limitation of claims 4.

### ***Conclusion***


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Oae et al (6646275) charged particle beam exposure system and method; Krans et al (6593584) discloses multi-beam lithography apparatus with mutually different beam limiting apertures; or Iwabuchi et al (6512227) discloses method and apparatus for inspecting pattern of semiconductor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Nguyen whose telephone number is (571) 272-2425. The examiner can normally be reached on 9:30 am to 7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

July 18, 2006

  
Sang Nguyen  
Patent Examiner  
Art Unit 2877